THE BRAIN: Understanding Neurobiology Through the Study of Addiction		
Kentucky Core Content for Science Assessment: Grades 8 through 11		
Lesson	**Standard**	**Description**
1, 2, 3	**SC-H-3.1.1**	Cells have particular structures that underlie their function. Every cell is surrounded by a membrane that separates it from the outside world. Inside the cell is a concentrated mixture of thousands of different molecules that form a variety of specialized structures. These structures carry out specific cell functions.
1, 2, 3	**SC-H-3.1.2**	Most cell functions involve chemical reactions. Food molecules taken into cells react to provide the chemical constituents needed to synthesize other molecules. Both breakdown and synthesis are made possible by a large set of protein catalysts, called enzymes. The breakdown of some of the food molecules enables the cell to store energy in specific chemicals that are used to carry out the many functions of the cell.
1	**SC-H-3.1.3**	Cells store and use information to guide their functions. The genetic information stored in DNA directs the synthesis of the thousands of proteins that each cell requires.
1, 2, 3, 4	**SC-H-3.1.4**	Cell functions are regulated. Regulation occurs both through changes in the activity of the functions performed by proteins and through selective expression of individual genes. This regulation allows cells to respond to their internal and external environments and to control and coordinate cell growth and division.
1, 2	**SC-H-3.16**	In the development of multicellular organisms, cells multiply and differentiate to form many specialized cells, tissues, and organs. This differentiation is regulated through the expression of different genes.
1, 2, 3, 4	**SC-H-3.2.1**	Multicellular animals have nervous systems that generate behavior. Nerve cells communicate with each other by secreting specific molecules. Specialized cells in sense organs detect light, sound, and specific chemicals enabling animals to monitor what is going on in the world around them.
2, 3, 4	**SC-H-3.2.3**	The broad patterns of behavior exhibited by organisms have changed over time through natural selection to ensure reproductive success. Organisms often live in unpredictable environments, so their behavioral responses must be flexible enough to deal with uncertainty and change. Behaviors often have an adaptive logic.
2, 3, 4	**2.1 Scientific Ways of Thinking and Working**	Students will formulate testable hypotheses and demonstrate the logical connections between the scientific concepts guiding a hypothesis and the design of an experiment; use equipment, tool, techniques, technology, and mathematics to improve scientific investigations and communications; use evidence, logic, and scientific knowledge to develop and revise scientific explanations and models; design and conduct different kinds of scientific investigations; communicate and defend the designs, procedures, observations, and results of scientific investigations; review and analyze scientific investigations and explanations of other investigators, including peers.

3, 4	**2.1 Personal and Social Perspectives**	Students will explore the impact of scientific knowledge and discoveries on personal and community health.
All lessons	**2.1 Nature of Science**	Students will analyze the role science plays in everyday life and investigate advances in science and technology that have important and long lasting effects on science and society.
Kentucky Core Content for Reading Assessment: Grades 8 through 10		
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Lesson	**Standard**	**Description**
All lessons	**RD-H-2.0.1**	Locate, evaluate, and apply information for a realistic purpose.
All lessons	**RD-H-2.0.12**	Make predictions and draw conclusions based on what is read.
All lessons	**RD-H-2.013**	Analyze the content as it applies to students' lives and/or real world issues.
All lessons	**RD-H-2.0.5**	Make, confirm, and revise predictions.
4, 5	**RD-H-2.0.7**	Formulate opinions in response to a reading passage.
4, 5	**RD-H-3.0.10**	Recognize the appropriateness of an argument for an intended audience.
4, 5	**RD-H-3.0.11**	Accept or reject an argument, giving supporting evidence from the passage.
1, 2, 3	**RD-H-4.0.12**	Interpret the meaning of specialized vocabulary.
Kentucky Core Content for Mathematics Assessment: Grades 9 through 11		
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Lesson	**Standard**	**Description**
3, 4	**MA-H-1.2.1**	Students will perform addition, subtraction, multiplication, and division with real numbers in problem-solving situations to specified accuracy.
3, 5	**MA-H-3.1.5**	Students will understand differences between theoretical and experimental probability.
2, 3, 4, 5	**MA-H-3.2.1**	Students will analyze, interpret results, make decisions, and draw conclusions based on a set of data.

3, 5	**MA-H-3.2.3**	Students will organize, display, and interpret statistical models (tables, graphs) of bivariate data.
3, 4, 5	**MA-H-3.2.4**	Students will interpret the results of a probability simulation, draw conclusions, and make predictions.

Kentucky Core Content Practical Living/Vocational Studies: High School – Health Subdomain

THE BRAIN: Understanding Neurobiology Through the Study of Addiction

Lesson	Standard	Description
2, 3, 4	**PL-H-1.3.1**	Decisions which promote health and prevent illnesses, diseases, and injuries contribute positively to personal well-being.
1, 3, 4	**PL-H-1.7.2**	There are potential short- and long-term consequences and risks of behavioral choices (e.g., tobacco, alcohol, and other drug use) on individuals and families.
5	**PL-H-1.7.3**	Intervention and suggesting treatment are forms of help for addictive behaviors.